CLAIMS

What is claimed is:

1. A method of preparing a crystal polymorph, comprising the steps of:

a. preparing a supersaturated solution of a known substance;

b. selecting a polarization state of light to induce the onset of nucleation of crystals of the polymorph of the known substance from the supersaturated solution; and

c. subjecting the supersaturated solution to the light for a period of time so as to induce the onset of nucleation of the crystals of the polymorph.

2. The method of preparing a crystal polymorph as claimed in Claim 1, wherein the supersaturated solution is aged for a period of 1 hour to 200 hours.

3. The method of preparing a crystal polymorph as claimed in Claim 1, wherein the light is at most minimally absorbed by the supersaturated solution.

4. The method of preparing a crystal polymorph as claimed in Claim 1, wherein the wavelength of the light is near infrared.

5. The method of preparing a crystal polymorph as claimed in Claim 4, wherein the wavelength of the light is 1064 nm.

6. The method of preparing a crystal polymorph as claimed in Claim 1, wherein the light has linear polarization.

7. The method of preparing a crystal polymorph as claimed in Claim 1, wherein the light has circular polarization.

8. The method of preparing a crystal polymorph as claimed in Claim 1, wherein the light has elliptical polarization.

9. The method as claimed in Claim 1, wherein the polymorph is used as a substitute for known polymorphs made under known conditions.

10. The method as claimed in Claim 1, wherein the polymorph is used as a seed material to create larger amounts of the polymorph to be used in known processes.

11. The method as claimed in Claim 1, wherein supersaturation is achieved by a method selected from the group consisting of cooling, heating, solvent evaporation, and altering solvent composition.

12. The method as claimed in Claim 11, wherein the solvent is selected from the group consisting of organic solvents, inorganic solvents, and supercritical solvents.

13. The method as claimed in Claim 1, wherein the substance is selected from the group consisting of pharmaceuticals, amino acids, peptides, proteins, carbohydrates, amines, alkanes, alkenes, alkynes, aromatics, heterocyclic compounds, alcohols, organometallics, and carboxylic acids.

14. The method as claimed in Claim 1, wherein the laser light is pulsed.

15. The method as claimed in Claim 14, wherein the laser light is pulsed at between 1 and 100 pulses per second.

16. The method as claimed in Claim 15, wherein the laser light pulses at 10 pulses per second.

17. The method as claimed in Claim 1, wherein the supersaturated solution is subjected to the laser light for a period of between 0.01 second and 1 hour.

18. The method as claimed in Claim 17, wherein the supersaturated solution is subjected to the laser light for a period of between 0.01 second and 60 seconds.

19. A method of preparing a crystal polymorph, comprising the steps of:

a. preparing a supersaturated solution of a known substance;

b. aging the supersaturated solution for a period of 1 hour to 200 hours;

c. subjecting the supersaturated solution to the light from a near-infrared laser emitting light at a selected polarization state for a period of time so as to induce the onset of nucleation of the crystals of the polymorph.

20. The method of preparing a crystal polymorph as claimed in Claim 19, wherein the wavelength of the light is 1064 nm.

21. The method of preparing a crystal polymorph as claimed in Claim 20, wherein the power of the light is between 0.1 GW/cm^2 and 10 GW/cm^2.

22. The method of preparing a crystal polymorph as claimed in Claim 19, wherein the light has linear polarization.

23. The method of preparing a crystal polymorph as claimed in Claim 19, wherein the light has circular polarization.

24. The method pf preparing a crystal polymorph as claimed in Claim 19, wherein the light has elliptical polarization.

25. The method as claimed in Claim 19, wherein the laser light is pulsed at between 1 to 100 pulses per second.

26. The method as claimed in Claim 25, wherein the laser light pulses at 10 pulses per second.

27. The method as claimed in Claim 26, wherein the supersaturated solution is subjected to the laser light for a period of between 0.01 second and 1 hour.

28. The method as claimed in Claim 27, wherein the supersaturated solution is subjected to the laser light for a period of 0.01 second and 60 seconds and the light is at most minimally absorbed by the supersaturated solution.

29. The method as claimed in Claim 25, wherein supersaturation is achieved by a method selected from the group consisting of cooling, heating, solvent evaporation, and altering solvent composition.

30. The method as claimed in Claim 29, wherein the solvent is selected from the group consisting of organic solvents, inorganic solvents, and supercritical solvents.

31. A method of preparing a crystal polymorph from a known substance, comprising the steps of:

a. preparing a supersaturated solution of the known substance;

b. aging the supersaturated solution for a period of 1 hour to 200 hours;

c. selecting a polarization state of laser light to induce the onset of nucleation of crystals of the crystal polymorph of the known substance from the supersaturated solution, wherein the light is at most minimally absorbed by the supersaturated solution; and

d. subjecting the supersaturated solution to the laser light for between 0.01 second and 1 hour so as to induce the onset of nucleation of the crystals of the polymorph.

32. The method as claimed in Claim 31, wherein the laser light is pulsed at between 1 and 100 pulses per second.

33. The method as claimed in Claim 32, wherein the laser light pulses at 10 pulses per second.

34. The method as claimed in Claim 33, wherein the supersaturated solution is subjected to the laser light for a period of between 0.01 second and 60 seconds.

35. The method as claimed in Claim 31, wherein the substance is selected from the group consisting of pharmaceuticals, amino acids, peptides, proteins, carbohydrates, amines, alkanes, alkenes, alkynes, aromatics, heterocyclic compounds, alcohols, organometallics, and carboxylic acids.

36. The method as claimed in Claim 35, wherein supersaturation is achieved by a method selected from the group consisting of cooling, heating, solvent evaporation, and altering solvent composition.

37. The method as claimed in Claim 34, wherein the solvent is selected from the group consisting of organic solvents, inorganic solvents, and supercritical solvents.

38. The method of preparing a crystal polymorph as claimed in Claim 35, wherein the wavelength of the light is near infrared.

39. The method of preparing a crystal polymorph as claimed in Claim 38, wherein the wavelength of the light is 1064 nm.

40. The method of preparing a crystal polymorph as claimed in Claim 31, wherein the laser light has a polarization state selected from the group consisting of linear polarization, circular polarization, and elliptical polarization.

41. The method of preparing a crystal polymorph as claimed in Claim 40, wherein the light has linear polarization.

42. The method of preparing a crystal polymorph as claimed in Claim 40, wherein the light has circular polarization.

43. The method of preparing a crystal polymorph as claimed in Claim 40, wherein the light has elliptical polarization.

44. The method as claimed in Claim 31, wherein the polymorph is used as a substitute for known polymorphs made under known conditions.

45. The method as claimed in Claim 31, wherein the polymorph is used as a seed material to create larger amounts of the polymorph to be used in known processes.